

CLAIMS

1. A vending machine for making and supplying books on request and in real time comprising:

a computer data storage device for storing a plurality of book titles, each including the text and image information, the cover information, and other identification data.

an operating panel including a display for displaying the identification information of the book titles stored in said data storage device, and the user's interface enabling a user to select one of said stored book titles for printing; and

book making apparatus for printing and binding said selected book title for immediate delivery to said user.

2. The apparatus according to claim 1 wherein said book making apparatus comprises:

a text and image print engine for printing the text and image information of said selected book title on a plurality of pages;

a covers print engine for printing the cover information of said selected book title on front and back covers material;

a collator to collate the printed pages and the front and back covers of the book selected by the user;

a binder for binding the printed pages and covers collated by said collator; and

a controller for extracting from said storage device a book title selected by the user, and for controlling said text and images to be printed, said cover information to be printed, said collator, and said binder, thereby to print and bind the book selected by the user.

3. The apparatus according to claim 2 whereas said text and image print engine prints in black and white and whereas said covers print engine prints in color.

4. The apparatus according to claim 1, wherein said operating panel includes a payment device to be used by the user for paying for the selected book, and a discharge device for discharging the selected book after having being printed by the text/image and color print engines and bound by the binder.
5. The apparatus according to claim 4, wherein said payment device in the operating panel includes a credit card slot for insertion of a credit card by the user.
6. The apparatus according to either of claims 4 or 5, wherein said operating panel further includes a driver slot for the insertion of an external data carrier containing a book title information, by the user to be printed and bound in place of a book title stored in said data storage device.
7. The apparatus according to any of claims 3-6 wherein said operating panel further includes at least one display screen for displaying information related to any of said book titles.
8. The apparatus according to any one of claims 3-7, wherein said operating panel, text and image print engine, cover print engine, collator and binder and operation controllers are all housed within a common housing.
9. The apparatus according to claim 8, wherein said data storage device is also housed within said common housing.
10. The apparatus according to any of claims 1-9 wherein said text and image print engine includes a plurality of sheets and a sheet fed loading mechanism.
11. The apparatus of 1-10 where said text and image print engine includes a plurality of sheets and a sheet fed loading mechanism.
12. The apparatus according to any one of claims 1-9, wherein said text and image print engine includes a holder for at least one roll of a paper web, a feeder for feeding the paper web to the text and image print engine,

and a cutter for cutting said paper web into sheets of a page size as controlled by said controller.

13. The apparatus according to claim 12, wherein said cutter is downstream of the text and image print engine such that said paper web is cut into sheets after the text has been printed by the text and image print engine.

14. The apparatus according to claim 12, wherein said cutter is upstream of the text and image print engine such that said paper web is cut into sheets before the text has been printed by the text and image print engine.

15. The apparatus according to any one of claims 12-14, wherein said text and image print engine includes a plurality of holders for holding a plurality of rolls of paper web, each holder including a sensor for sensing the quantity of paper web in the respective holder, and for actuating said controller to automatically switch-over to another holder when the paper web in the respective holder approaches depletion.

16. The apparatus according to claim 15, wherein said text and image print engine further includes a holder guide for each roll holder for guiding the paper web therefrom;

an exit guide;

and an indexible guide between all the holder guides and said exit guide, and indexible by said controller to selectively align one of said holder guides with said exit guide.

17. The apparatus according to claim 16, wherein said holders and holder guides are arcuately arrayed over said indexible guide, said indexible guide, said indexible guide being pivotable to selectively align one of the holder guides with said exit guide.

18. The apparatus according to claim 17, wherein said holder guides are of two different lengths, the guides of one length alternating with those of the other lengths, to minimize the space occupied by the holders and their respective paper web rolls.

19. The apparatus according to any one of claims 16-18, wherein each of said guides includes a fixed guide element, and a pivotal guide element, each of said guide elements including pinch rolls for engaging the paper web when fed there through.

5 20. The apparatus according to any one of claims 1-19, wherein said text and image print engine includes:

a first conveyer system for receiving the paper web with one face facing upwardly;

a first print assembly overlying said first conveyer system for printing on said one side of the paper web;

10 a second conveyer system for receiving the paper web from the first conveyer system, with the opposite face of the web facing upwardly;

and a second print assembly overlying said second conveyer system for printing on said opposite face of the web facing upwardly.

15 21. The apparatus according to claim 20, wherein said first and second print assemblies are ink-jet print heads page wide arrays.

22. The apparatus according to claim 21, wherein said text and image print engine further includes a dryer downstream of said first and second conveyer assembly.

20 23. The apparatus according to any one of claims 1-22, wherein said cover print engine includes:

a bin for receiving a stack of covers pre-cut to size;

a covers print engine assembly for printing the cover information;

25 and a top feeder for feeding the covers sequentially from the top of the stack in the bin to the cover print engine assembly;

said cover print engine assembly being controlled by said controller to print the front cover information of a selected book title on one cover, and the back cover information of the selected book title on the immediately succeeding cover.

24. The apparatus according to claim 23, wherein said cover print engine assembly includes a plurality of print heads for printing in color.

25. The apparatus according to claim 24, wherein each of said print heads prints its respective color out to the cover from a colored transfer ribbon.

5 26. The apparatus according to claim 25, wherein each of said print heads prints its respective color out to the cover from a color transfer ribbon by a thermal transfer process.

27. The apparatus according to any one of claims 1-26, wherein said collator includes:

10 a collator frame;

a page feeder for feeding the printed pages of text to the collator frame, and to stack the pages therein, starting with the first page, facing downwardly;

15 and a cover feeder for feeding said covers to said collator frame, starting with said front cover, and including an inverter for inverting the front cover when fed to the collator frame.

28. The apparatus according to claim 27, wherein said collator further includes:

20 fork insertable in an inclined position in said collector frame, said page feeder feeding the printed pages of text/image and stacking them onto the fork, starting with the first page facing downwardly;

whereas a space is provided between the fork and the collator frame, to permit feeding of said front cover in inverted position into the lower end of the stack, and said back cover to the upper end of the stack;

25 and a clamping plate actuated by said controller for clamping the two covers with the stack of pages there between, in preparation for their binding by the binder.

30 29. The apparatus according to any one of claims 1-28, wherein said binder includes an adhesive applicator for applying adhesive to the edge of the printed pages and the cover collated by the collator.

30. The apparatus according to any one of claims 1-28, wherein said binder includes a tape applicator for applying adhesive tape to one edge of the printed pages and the covers collated by the collator.

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